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Gwo-Jiang

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[54] **STRUCTURAL IMPROVEMENT OF BANDING GUN**

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[57] **ABSTRACT**

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A type of structural improvement for banding gun, comprising a first handgrip and a second handgrip, the two handgrips are hinged on a hinge pin, between the two handgrips is a first connecting lever, one end of said first connecting lever is connected with the hinge pin, while the other end is connected to the front end of the tension-adjustable spring, the middle part of the first connecting lever is connected to the rear end of a second lever, the front end of the second connecting lever is connected to a band cutting blade, said band cutting blade is slid and accommodated in the front end of the first handgrip, serving to cut the fastening band automatically; so structured to achieve the functions of convenient operation, easy adjustment, etc.

[51] **Int. Cl.⁶** **B65B 13/18**

[52] **U.S. Cl.** **156/510; 156/579; 100/33 PB**

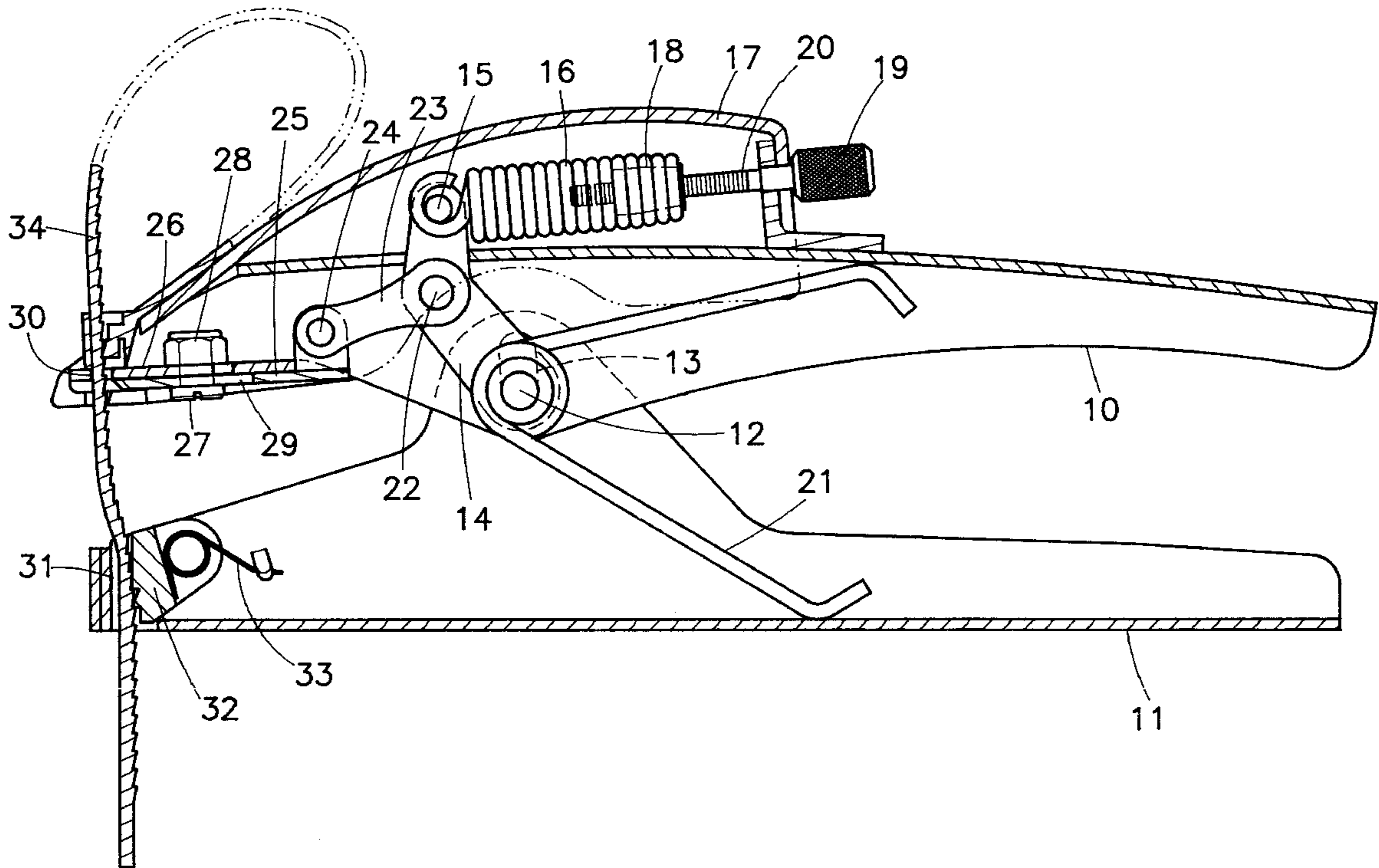
[58] **Field of Search** 156/510, 579, 156/580; 100/29, 32, 33 R, 33 PB

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3 Claims, 5 Drawing Sheets



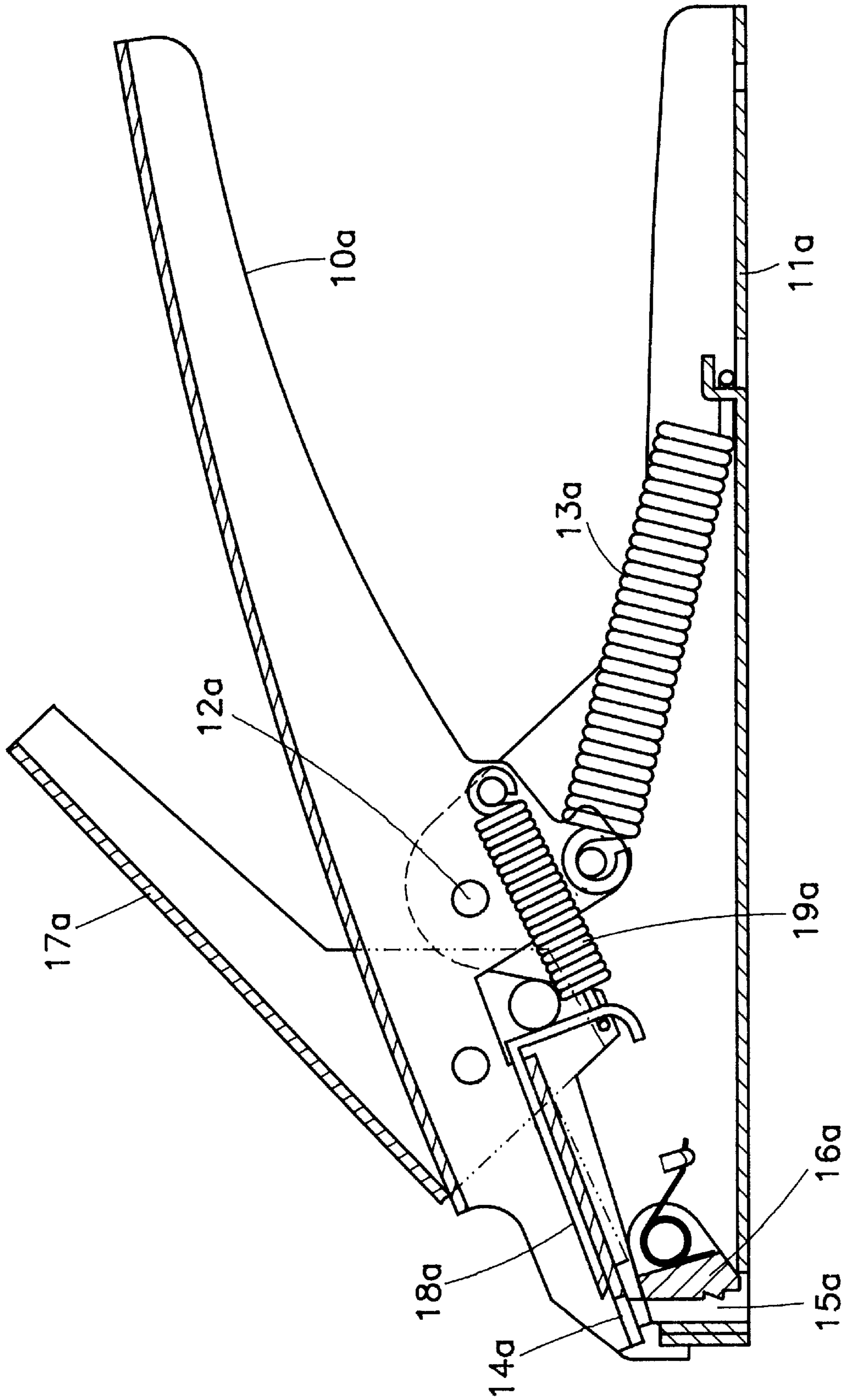


FIG. 1

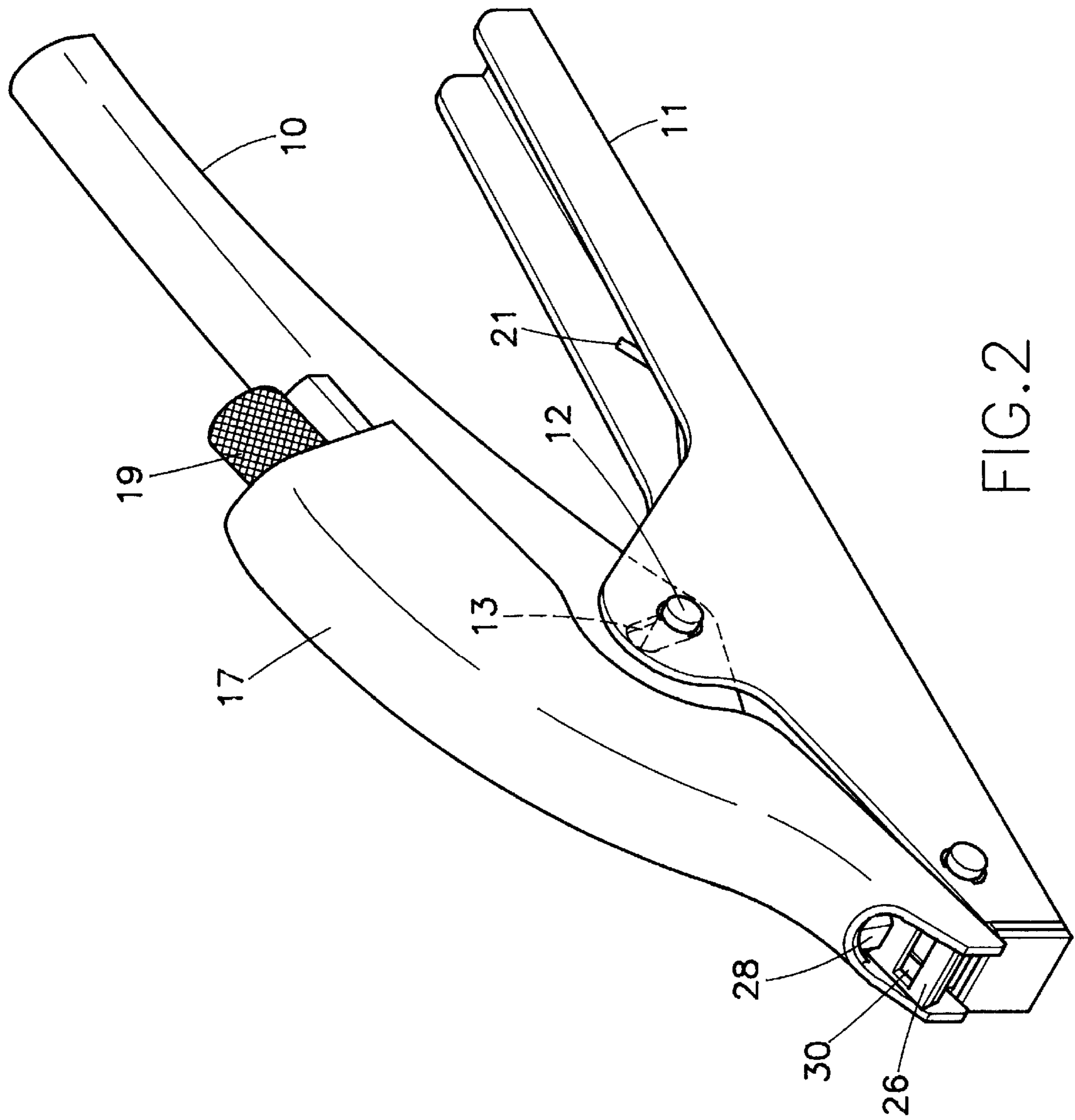


FIG. 2

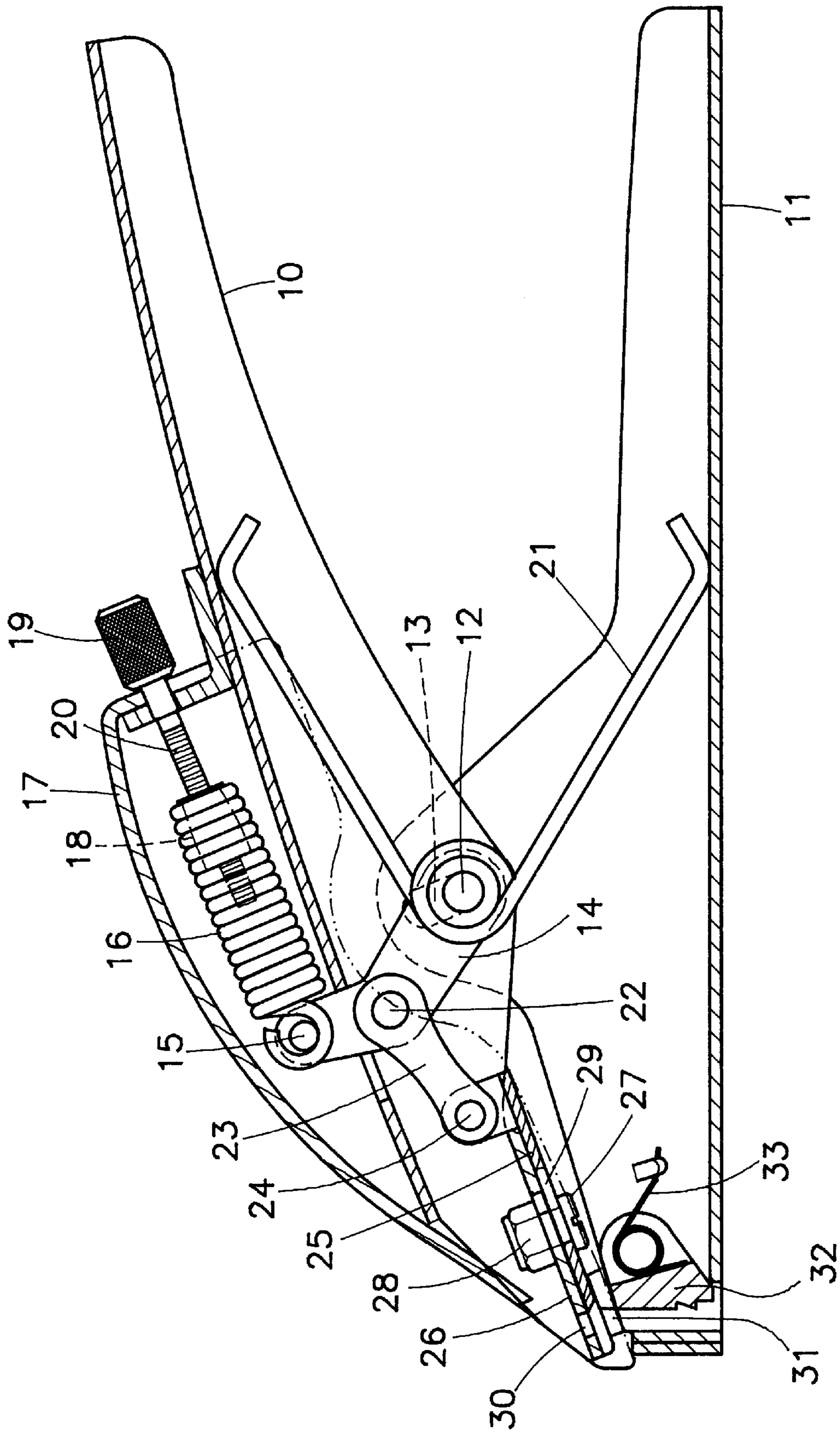


FIG. 3

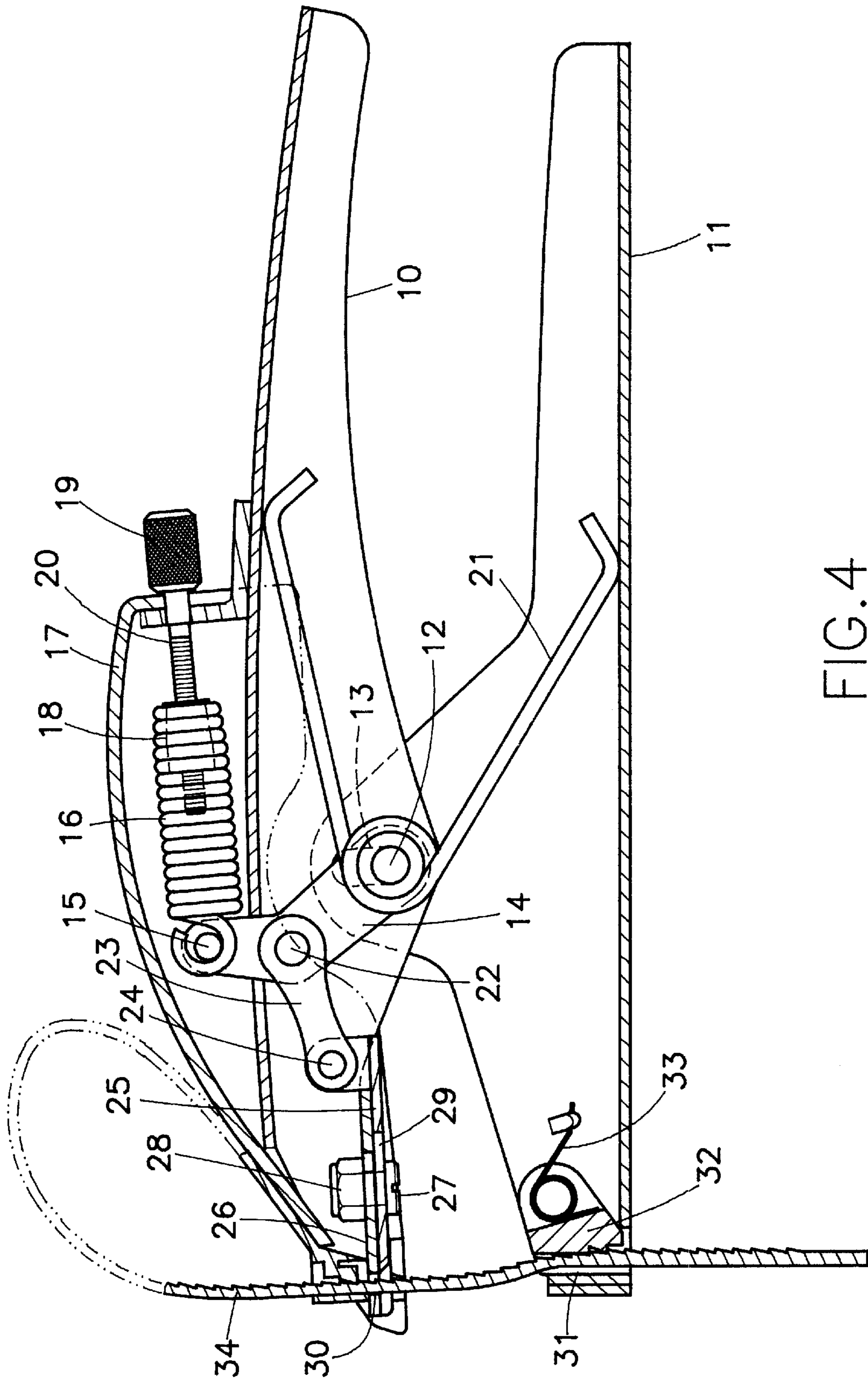


FIG. 4

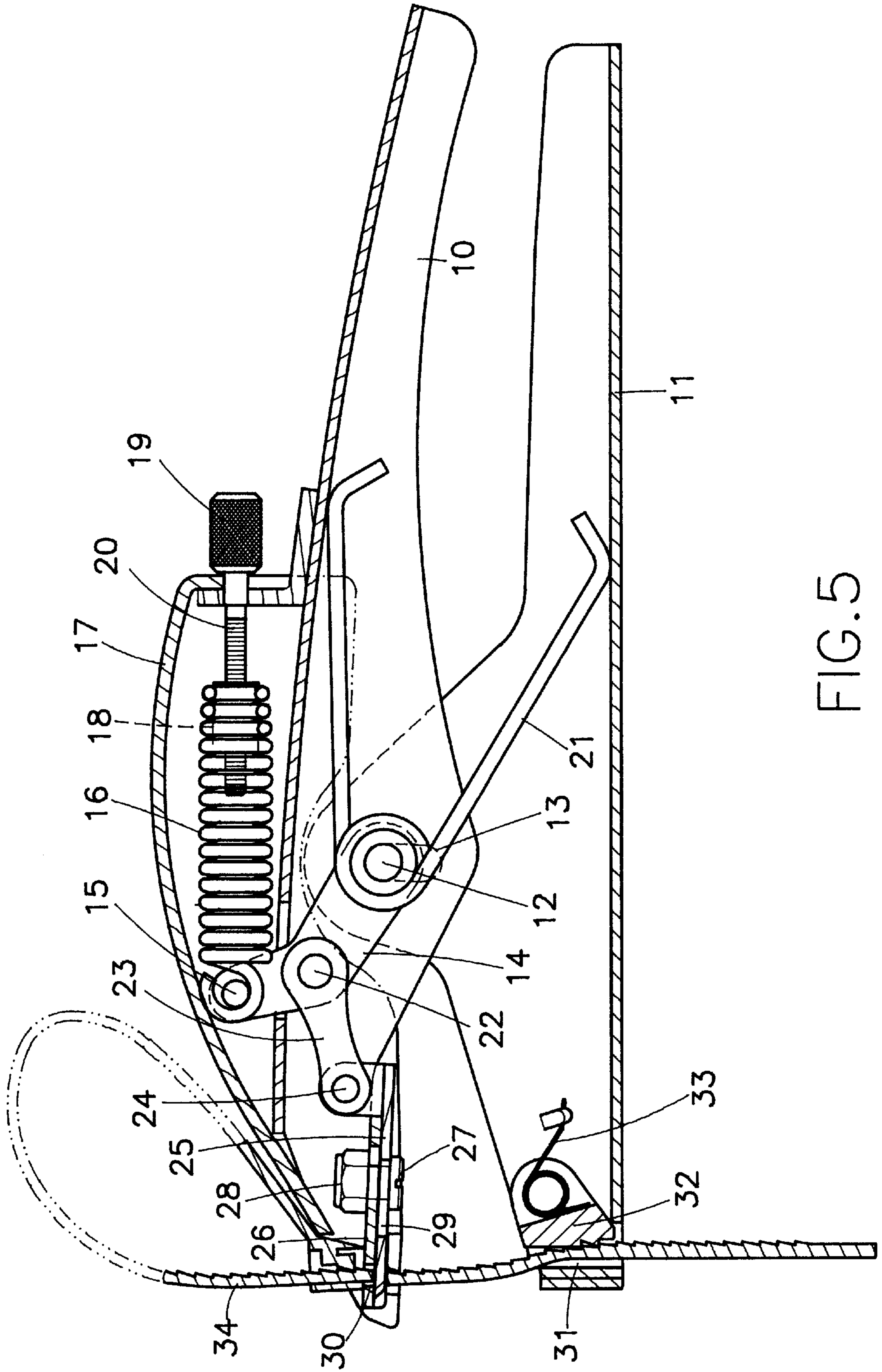


FIG. 5

STRUCTURAL IMPROVEMENT OF BANDING GUN

BACKGROUND OF THE INVENTION

The subject invention relates to a type of structural improvement of banding gun, particularly to one with convenient operation and easy adjustment.

Please refer to FIG. 1 which is a plain sectional view of a prior art of banding gun, said banding gun comprises two handgrips **10a**, **11a**, said two handgrips **10a**, **11a** are hinged as one unit on a hinge pin **12a**, between the two handgrips **10a**, **11a** is a tension spring **13a** that serves to pull the front ends of the two handgrips **10a**, **11a** to close together, at the front ends of the two handgrips **10a**, **11a** are through holes **14a**, **15a** to be pulled through by the fastening band, when the rear ends of the two handgrips are gradually pressed together, the front ends of the two handgrips **10a**, **11a** open gradually, while the catch piece **16a** at the front of a handgrip **10a** will catch and fasten one end of the band, so the front end of said handgrip **10a** will pull tight the band, so the band will fasten the object tightly, when the object is fastened tight, a band-cutting handle **17a** can be depressed to drive a band cutting blade **18a** to move forward, to cut the excessive portion of the band after the fastening operation is accomplished. However, in such a prior art of banding gun mechanism, the band cutting blade **18a** relies on the resetting tension provided by a tension spring **19a**, said tension spring **19a** could not adjust the tension properly, resulting in inconvenient operation in cutting the band, it has the weaknesses of inconvenient operation and inability of adjustment.

SUMMARY OF THE INVENTION

The primary objective of the subject invention is to present a type of structural improvement of banding gun, comprising a first handgrip and a second handgrip, the two handgrips are hinged on a hinge pin, between the two handgrips is a first connecting lever, one end of said first connecting lever is connected to the hinge pin, while the other end is connected to the front end of a tension-adjustable spring, the middle part of the first connecting lever is connected to the rear end of a second connecting lever, the front end of the second connecting lever is connected to a band cutting blade, said band cutting blade is slid and accommodated in the front end of the first handgrip, the subject invention uses the first connecting lever and the second connecting lever to drive the band cutting blade, when adjusting the spring tension, the pulling force of the spring is transmitted via the first connecting lever and the second connecting lever to the band cutting blade, instead of direct pulling on the band cutting blade by the spring, so it enables easier adjustment and better adjustment, and it has the functions of convenient operation and easy adjustment, etc.

To enable your better understanding of the characteristics and technical contents of the subject invention, please refer to the following detailed description with drawings; however, the attached drawings are only for the purposes of reference and description, which shall not be based to restrict or limit the subject invention:

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a plain sectional view of a prior art of banding gun.

FIG. 2 is a perspective view of the subject invention.

FIG. 3 is a plain sectional view of the subject invention.

FIG. 4 is a view of the subject invention in operation.

FIG. 5 is a view of the subject invention in operation.

Brief Description of Numerals

10	first handgrip
11	second handgrip
12	hinge pin
13	slide way
14	first connecting lever
15	first connecting pin
16	spring
17	fixing seat
18	screw hole seat
19	adjusting bolt
20	threading part
21	spring
22	second connecting pin
23	second connecting lever
24	third connecting pin
25	band cutting blade
26	base plate
27	screw
28	nut
29	guide channel
30	through hole
31	through hole
32	catch piece
33	spring
34	band
10a	handgrip
11a	handgrip
12a	hinge pin
13a	tension spring
14a	through hole
15a	through hole
16a	catch piece
17a	band cutting handle
18a	band cutting blade
19a	tension spring

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Please refer to FIGS. 2 and 3 which are respectively a perspective view and a plain sectional view of the subject invention. The subject invention relates to the presentation of a type of structural improvement of banding gun, said banding gun comprises a first handgrip **10** and a second handgrip **11**, said two handgrips **10**, **11** are hinged on a hinge pin **12**, both ends of said hinge pin **12** are accommodated in the slide way **13** at two sides of the first handgrip **10**. Between the two handgrips **10**, **11** is an elbow-shaped first connecting lever **14**, one end of said first connecting lever **14** is joined as one unit with the hinge pin **12**, another end of the first connecting lever **14** is connected by a first connecting pin **15** to a spring (tension spring) **16**, fixed on the outside of the first handgrip **10** is a fixing seat **17**, said spring **16** is located inside the fixing seat **17**, the front end of the spring **16** is hooked to the first connecting pin **15**, fixed on the rear end of the spring **16** is a screw hole seat **18**, an adjusting bolt **19** is hinged to the rear end of the fixing seat **17**, its threading part **20** is threaded to the screw hole seat **18** at the rear end of the spring **16**, so the tension of the spring **16** may be adjusted by turning the adjusting bolt **19**, and between the two handgrips **10**, **11** is a spring (tension spring) **21** which serves to push the front ends of the two handgrips **10**, **11** to close together. The middle part of the first connecting lever **14** is linked by a second connecting pin **22** to the rear end of a second connecting lever **23**, the front end of the second connecting lever **23** is linked by a third connecting pin **24** to a band cutting blade **25**, the front end of said band cutting blade **25** is a sharp blade, the band

cutting blade **25** is slid and accommodated in the bottom of the base plate **26** at the front of the first handgrip **10**, and is fixed in place by a screw **27** and a nut **28**, the band cutting blade **25** is positioned between the screw **27** and the base plate **26**, on the band cutting blade **25** is an elongated guide channel **29** to allow the screw **27** to pass through, so the band cutting blade **25** may move freely to and fro. At the front ends of the two handgrips **10**, **11** are two through holes **30**, **31** to allow the fastening band to pull through, at the rear side of the through hole **31** on the second handgrip **11** is a catch piece **32**, said catch piece **32** may be pushed forward by a spring (tension spring) **33** to catch in place.

Please refer to FIGS. **4** and **5** which are the views of the subject invention in operation, the band **34** may be pulled through the through holes **30**, **31** at the front ends of the two handgrips **10**, **11**, so that when the rear ends of the two handgrips **10**, **11** are gradually pressed together, the front ends of the two handgrips **10**, **11** will gradually open, and the catch piece **32** at the front of the second handgrip **11** catches and fastens one end of the band **34**, so the front of the second handgrip **11** will pull tight the band **34** (as illustrated in FIG. **4**), so the band **34** will tightly fasten the object to be fastened, when the band **34** has tightened to some extent, the front ends of the two handgrips **10**, **11** cannot be opened further wider, then, if the two handgrips **10**, **11** are pressed further, the hinge pin **12** will move upward inside the slide way **13** of the first handgrip **10**, which will cause the first connecting lever **14** to push the second connecting lever **23** to move forward, to drive the band cutting blade **25** at the front end of the second connecting lever **23** to move forward, to cut the excessive portion of the fastening band **34** that has completed the fastening operation, to achieve the function of automatic cutting on the band **34**, without the need for an additional operation to cut the band **34**, the operation is quite convenient, and the main feature of the subject invention is to drive the band cutting blade **25** with the devices of the first connecting lever **14** and the second connecting lever **23**, when the adjusting bolt **19** is turned to adjust the tension of the spring **16**, the pulling force of the spring **16** is transmitted through the first connecting lever **14** and the second connecting lever **23** to the band cutting blade **25**, instead of direct pulling of the band cutting blade **25** by the spring **16**, therefore, the turning of the adjusting screw for adjustment purpose is made easier to enable a better adjustment, convenient operation, easy adjustment and such functions.

Summing up, the subject invention, with such features of convenient operation and easy adjustment, is an unprecedented new version that will fully satisfy the qualifications for a patent right, hence this application is filed in accordance with the Patent Law to protect the subject inventor's rights and interests. Your favorable consideration shall be appreciated.

It is declared hereby that the above description, covering only the preferred embodiment of the subject invention, should not be based to limit or restrict the subject claim, and that all equivalent structural and/or configurational variations and/or modifications easily conceivable to anyone skilled in the subject art, and deriving from the subject description with drawings herein shall reasonably be included in the intent of the subject claim.

I claim:

1. A type of structural improvement of banding gun, comprising a first handgrip and a second handgrip, said two handgrips being hinged as one unit on a hinge pin, both ends of said hinge pin being slid and accommodated inside the slide way at two sides of the first handgrip, between the two handgrips is a first connecting lever, one end of said first connecting lever being connected to the hinge pin, while the other end being connected to a tension-adjustable spring, between the two handgrips being a spring that serves to push together the front ends of the two handgrips, the middle part of the first connecting lever being connected to the rear end of the second connecting lever, the front end of the second connecting lever being connected to a band cutting blade, said band cutting blade being slid and accommodated in the front end of the first handgrip, at the front ends of the two handgrips being through holes, at the backside of the second handgrip being a catch piece, said catch piece being pushed in position by a spring.

2. The structural improvement of banding gun, as recited in claim **1**, wherein the first connecting lever is elbow-shaped.

3. The structural improvement of banding gun, as recited in claim **1**, wherein on the outside of the first handgrip is a fixing seat, said tension-adjustable spring is fixed in the fixing seat, at the rear end of the spring is a screw hole seat, an adjusting bolt is hinged in the fixing seat, the adjusting bolt is screwed to said screw hole seat, so the tension of the spring may be adjusted by turning the bolt.

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